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ferromagnetic

(fĕr'ō-măg-nĕt'ĭk)
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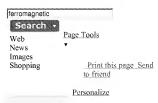
adj.

Of or characteristic of substances such as iron, nickel, or cobalt and various alloys that exhibit extremely high magnetic permeability, a characteristic saturation point, and magnetic hysteresis.

ferromagnetism fer 'r o·mag' ne·tism (-măg' nǐ-tǐz'əm) n.
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Sci-Tech Encyclopedia: Ferromagnetism
A property exhibited by certain metals, alloys, and compounds of the transition (iron group), rare-earth, ε actinide elements in which, below a certain temperature called the <u>Curie temperature</u> , the atomic magneti moments tend to line up in a common direction. Ferromagnetism is characterized by the strong attraction one magnetized body for another.
Atomic magnetic moments arise when the electrons of an atom possess a net magnetic moment as a resul of their angular momentum. The combined effect of the atomic magnetic moments can give rise to a relatively large magnetization, or magnetic moment per unit volume, for a given applied field. Above the Curie temperature, a ferromagnetic substance behaves as if it were paramagnetic: Its susceptibility approaches the Curie-Weiss law. The Curie temperature marks a transition between order and disorder of the alignment of the atomic magnetic moments. Some materials having atoms with <u>unequal</u> moments exhibit a special form of ferromagnetism below the Curie temperature called ferrimagnetism. See also Ca

temperature; Curie-Weiss law; Electron spin; Ferrimagnetism; Magnetic susceptibility; Paramagnetism. The characteristic property of a ferromagnet is that, below the Curie temperature, it can possess a spontaneous magnetization in the absence of an applied magnetic field. Upon application of a weak

magnetic field, the magnetization increases rapidly to a high value called the saturation magnetization